

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

REMARKS

Claims 1-116 have been canceled and new claims 117-156 have been added.
Claims 117-156 are pending.

I. Claim Objections

The Examiner has objected to the amendments to the claims that were filed with Applicants' response on October 6, 2003, alleging that they introduce new matter. Specifically, the Examiner states that, "The added material which is not supported by the original disclosure is as follows: the independent claims for example, claim 17 recite 'wherein said protein stimulates the proliferation of myeloid cells' and there is no support for this in the instant specification." See lines 3-6 of section (4) on page 2 of Paper No. 121903. Applicants respectfully disagree and traverse.

Initially, Applicants note that the claims which were objected to have been cancelled. However, the language objected to is now recited in claims 132 (upon which claims 133-140 depend), 155 and 156. Thus, the following remarks pertain to claims 132-140, 155 and 156. It is noted, however, that claims 117-131 and 141-154 do not recite the language objected to and are, therefore, presumed to be allowable.

It is well understood that the specification need not provide written description support in exactly the same words as are used in the claims. In fact, the Federal Circuit has held that it is sufficient that the description conveys to one skilled in the art that Applicants had possession of the invention. For example, see *In re Wilder*, 736 F.2d 1516, 1520 (Fed. Cir. 1984):

[i]t is not necessary that the claimed subject matter be described identically, but the disclosure originally filed must convey to those skilled in the art that applicant has invented the subject matter later claimed.

Moreover, the Federal Circuit has recently affirmed this view by holding "[i]f lack of literal support alone were enough to support a rejection under § 112, then the statement of *In re Lukach* "...that 'the invention claimed does not have to be described *in ipsius verbis* in order to satisfy the description requirement of § 112,' is empty verbiage." See *Union Oil Co. of California v. Atlantic Richfield Co. (Unocal)*, 208 F.3d 989, 1000 (Fed. Cir. 2000). Thus, there is no requirement that the claimed invention be described *verbatim* in the specification.

Applicants respectfully submit that the application as a whole clearly conveys a

role for the instant invention in stimulating the proliferation of myeloid cells. For example, the “Related Art” section of the instant application establishes that hematopoiesis, specifically myelopoiesis, is the field of science to which the instant invention is related. *See, e.g.*, page 1, line 14 through page 2, line 3 and also page 2, lines 9-11. In addition, the specification at page 5, lines 15-20 discloses that abnormal cell proliferation can be inhibited by suppressing the expression of HOIPS I, indicating that HOIPS I stimulates cell proliferation. The specification additionally teaches proliferative activity as a biological activity of the instant invention. *See* specification page 22, lines 16-17.

Further, the specification teaches that HOIPS I stimulates the proliferation of myelogenous leukemia cells:

Thus, in one embodiment, the present invention provides a method for treating cell proliferative diseases, and in particular acute and chronic myelogenous leukemias, by inserting into an abnormally proliferating cell which expresses the HOIPS I gene a synthetic DNA or RNA construct of the present invention, wherein said DNA or RNA construct represses said expression.

See lines 23-27 on page 29 of the specification. Thus, the present invention provides a method for treating myelogenous leukemia by repressing expression of the HOIPS I gene. This disclosure clearly indicates that HOIPS I is involved in proliferation of myelogenous leukemia cells. Since myelogenous leukemia cells are congruous with myeloid cells (*see* definition of “myelogenous leukemia” from Merriam Webster’s Medical Desk Dictionary, submitted herewith as Exhibit A), the specification discloses that HOIPS I stimulates the proliferation of myeloid cells.

Applicants respectfully submit that, based on the above cited support, the instant specification clearly discloses a role of HOIPS I in stimulating myeloid cell proliferation. Thus, Applicants’ previous amendments to the claims to recite that the claimed proteins “stimulate the proliferation of myeloid cells” are fully supported by the specification as originally filed and, therefore, do not constitute new matter. As such, Applicants respectfully request that this objection be reconsidered and withdrawn.

II. Rejections Under 35 USC §112, first paragraph- written description

Claims 17-28, 30-36, 38-47, 49-53, 55-59, 61-74, 76-81, 83-90, 92-99, 101-107,

109-114 and 116 are rejected under 35 USC §112, first paragraph for allegedly lacking written description in the specification. Specifically, the Examiner states, “The claims are directed to an isolated protein comprising an amino acid sequence at least 90% identical to amino acid residues 1 to 142 of SEQ ID NO:2 and the claims have no limitations to the function of the protein... The claims must recite a specific, measurable activity such that one can recognize a polypeptide as that claimed, or a fragment thereof.” *See* lines 5-7 of section (5) on page 3 and lines 8-10 on page 4 of Paper No. 121903. The Examiner adds, “In addition, the claims recite added material, which is not supported by the original disclosure. The independent claims for example, claim 17 recite ‘wherein said protein stimulates the proliferation of myeloid cells’ and there is no support for this in the instant specification.” *See* lines 14-16 on page 4 of Paper No. 121903. Finally, the Examiner states that, “In view of the foregoing, at the time the application was filed, would not have taught one skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” *See* lines 3-5 on page 5 of Paper No. 121903. Applicants respectfully disagree and traverse this rejection.

Claims 1-116 have been canceled. However it is worth noting that the Examiner’s reasons for rejecting previous claims 17-28, 30-36, 38-47, 49-53, 55-59, 61-74, 76-81, 83-90, 92-99, 101-107, 109-114 and 116 apply only to claims that recite the “stimulates the proliferation of myeloid cells.” Yet, previous claims 62-74, 76-81 and 83 did not recite such language. Accordingly, Applicants will address the rejection as it may apply to new claims that recite “stimulate proliferation of myeloid cells,” namely new claims 132-140 and 155-156.

As discussed above, new claims 132-140 and 155-156 are fully supported by the specification as filed, for example, at line 4 on page 23 through line 9 on page 24, at lines 15-20 on page 5, lines 16-17 on page 22, and lines 23-27 on page 29. Regarding the written description requirement, the MPEP states, “The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed.” *See* MPEP §2163 (I) (B). Applicants assert that the instant specification clearly conveys to the skilled artisan that Applicants, at the earliest effective filing date of the instant application, were in possession of the claimed invention. Applicants submit that claims 132-140 and 155-156 do, in fact, recite or depend from a claim that recites a specific,

measurable activity, that is, to stimulate the proliferation of myeloid cells.

Regarding the Examiner's allegation that the instant application would not have taught the skilled artisan how to make and use the claimed invention, Applicants submit that such a prerequisite is not the legal standard for satisfying the written description requirement, but rather, is relevant to enablement. Regardless, Applicants submit that the instant application clearly teaches one skilled in the art how to make and use the claimed invention.

In view of the above remarks, Applicants submit that the claimed invention is fully disclosed and defined by the instant specification. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 112, first paragraph be reconsidered and withdrawn.

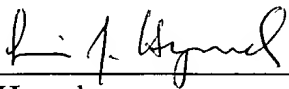
CONCLUSION

In view of the foregoing remarks, Applicants believe that this application is now in condition for allowance. An early notice to that effect is urged. The Examiner is invited to call the undersigned at the phone number provided below if any further action by Applicant would expedite the examination of this application.

Finally, if there are any fees due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 08-3425. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Dated: 3 - 23 - 04

Respectfully submitted,

By 
Lin J. Hymel

Registration No.: 45,414
HUMAN GENOME SCIENCES, INC.
9410 Key West Avenue
Rockville, Maryland 20850
(301) 251-6015

MJH/LJH/KM/lcc/ba

522 mydriatic • myelopoiesis

- 1** *myd-ri-at-ic* \mīd-rē-'at-ik\ *adj*: causing or involving dilation of the pupil of the eye
- 2** *mydriatic* *n*: a drug that produces dilation of the pupil of the eye
- my-ec-to-my** \mī-'ek-tō-mē\ *n, pl -mies*: surgical excision of part of a muscle
- my-el-en-ceph-a-lon** \mī-ə-len-'sef-ə-lān, -lən\ *n*: the posterior part of the developing vertebrate hindbrain or the corresponding part of the adult brain composed of the medulla oblongata — **my-el-en-ce-phal-ic** \-len(t)-ə-'fal-ik\ *adj*
- my-el-ic** \mī-'el-ik\ *adj*: of or relating to the spinal cord
- my-e-lin** \mī-ə-lən\ *n*: a soft white somewhat fatty material that forms a thick myelin sheath about the protoplasmic core of a myelinated nerve fiber — **my-e-lin-ic** \mī-ə-'lin-ik\ *adj*
- my-e-lin-at-ed** \mī-ə-lə-'nāt-əd\ *adj*: having a myelin sheath (~ nerve fibers)
- my-e-li-na-tion** \mī-ə-lə-'nā-shən\ *n*: 1: the process of acquiring a myelin sheath 2: the condition of being myelinated
- myelin basic protein** *n*: a protein that is a constituent of myelin, that causes experimental allergic encephalomyelitis when injected into laboratory animals, and that prob. acts as an autoantigen in individuals affected with multiple sclerosis — abbr. **MBP**
- my-e-lin-iza-tion** also *Brit* **my-e-lin-isa-tion** \mī-ə-'lin-ə-'zā-shən\ *n*: MYELINATION
- my-e-li-noc-la-sis** \mī-ə-lə-'nāk-lə-səs\ *n, pl -la-ses* \-'sēz\ : the process of destruction of myelin leading to demyelination — **my-e-li-no-clas-tic** \-lin-ə-'klast-ik\ *adj*
- my-e-li-nol-y-sis** \-'nāl-ə-səs\ *n, pl -y-ses* \-'sēz\ : DEMYELINATION — see CENTRAL PONTINE MYELINOLYSIS
- my-e-li-no-tox-ic** \mī-ə-'lin-ə-'tāk-sik\ *adj*: destructive of myelin (a substance that is ~ in vitro)
- myelin sheath** *n*: a layer of myelin surrounding some nerve fibers — called also *medullary sheath*
- my-e-li-tis** \mī-ə-'lit-əs\ *n, pl my-e-lit-i-des* \-'lit-ə-'dēz\ : inflammation of the spinal cord or of the bone marrow — **my-e-lit-ic** \-'lit-ik\ *adj*
- my-e-lo-ar-chi-tec-ton-ic** \mī-ə-lō-'är-kə-'tek-'tān-ik\ *adj*: of or relating to myeloarchitectonics
- my-e-lo-ar-chi-tec-ton-ics** \-iks\ *n pl* but *sing in constr*: cytological architectures of the brain, spinal cord, or bone marrow
- my-e-lo-blast** \mī-ə-lə-'blast\ *n*: a large mononuclear non-granular bone-marrow cell; *esp*: one that is a precursor of a myelocyte — compare **LEUKOBLAST** — **my-e-lo-blas-tic** \mī-ə-lə-'blas-tik\ *adj*
- my-e-lo-blas-te-mia** or chiefly *Brit* **my-e-lo-blas-tae-mia** \mī-ə-lō-blas-'tē-mē-ə\ *n*: the presence of myeloblasts in the circulating blood (as in myelogenous leukemia)
- myeloblastic leukemia** *n*: MYELOGENOUS LEUKEMIA
- my-e-lo-blas-to-ma** \-blas-'tō-mə\ *n, pl -mas* or *-ma-ta* \-mət-ə\ : a myeloma consisting of myeloblasts
- my-e-lo-blas-to-sis** \-blas-'tō-səs\ *n, pl -to-ses* \-'sēz\ : the presence of an abnormally large number of myeloblasts in the tissues, organs, or circulating blood
- my-e-lo-cele** \mī-ə-lə-'sēl\ *n*: spina bifida in which the neural tissue of the spinal cord is exposed — compare **MYELOMENINGOCELE**
- my-e-lo-coele** \mī-ə-lə-'sēl\ *n*: the central canal of the spinal cord
- my-e-lo-cyte** \mī-ə-lə-'sit\ *n*: a bone-marrow cell; *esp*: a motile cell with cytoplasmic granules that gives rise to the blood granulocytes and occurs abnormally in the circulating blood (as in myelogenous leukemia) — **my-e-lo-cyt-ic** \mī-ə-lə-'sit-ik\ *adj*
- myelocytic leukemia** *n*: MYELOGENOUS LEUKEMIA
- my-e-lo-cy-to-ma** \mī-ə-lō-sī-'tō-mə\ *n, pl -mas* or *-ma-ta* \-mət-ə\ : a tumor esp. of fowl in which the typical cellular element is a myelocyte or a cell of similar differentiation
- my-e-lo-cy-to-sis** \-sī-'tō-səs\ *n, pl -to-ses* \-'sēz\ : the pres-

ence of excess numbers of myelocytes esp. in the blood or bone marrow

my-e-lo-dys-pla-sia \-dis-'plā-zh(ē)-ə\ *n*: a developmental anomaly of the spinal cord — **my-e-lo-dys-plas-tic** \-'plas-tik\ *adj*

my-e-lo-fi-bro-sis \mī-ə-lō-fi-'brō-səs\ *n, pl -bro-ses* \-'sēz\ : an anemic condition in which bone marrow becomes fibrotic and the liver and spleen usu. exhibit a development of blood-cell precursors — **my-e-lo-fi-brot-ic** \-'brāt-ik\ *adj*

my-e-log-e-nous \mī-ə-'lāj-ə-nəs\ also **my-e-lo-gen-ic** \mī-ə-lə-'jen-ik\ *adj*: of, relating to, originating in, or produced by the bone marrow (~ sarcoma)

myelogenous leukemia *n*: leukemia characterized by proliferation of myeloid tissue (as of the bone marrow and spleen) and an abnormal increase in the number of granulocytes, myelocytes, and myeloblasts in the circulating blood — called also **granulocytic leukemia**, **myeloblastic leukemia**, **myelocytic leukemia**, **myeloid leukemia**; see **ACUTE MYELOGENOUS LEUKEMIA**, **ACUTE NONLYMPHOCYTIC LEUKEMIA**, **CHRONIC MYELOGENOUS LEUKEMIA**

my-e-lo-gram \mī-ə-lə-'gram\ *n*: 1: a differential study of the cellular elements present in bone marrow usu. made on material obtained by sternal biopsy 2: a roentgenogram of the spinal cord made by myelography

my-e-lo-graph-ic \mī-ə-lə-'graf-ik\ *adj*: of, relating to, or made by means of a myelogram or myelography — **my-e-lo-graph-i-cal-ly** \-i-k(ə)-lē\ *adv*

my-e-log-ra-phy \mī-ə-'lāg-rə-fē\ *n, pl -phies*: roentgenographic visualization of the spinal cord after injection of a contrast medium into the spinal subarachnoid space

my-e-loid \mī-ə-'lōid\ *adj*: 1: of or relating to the spinal cord 2: of, relating to, or resembling bone marrow

myeloid leukemia *n*: MYELOGENOUS LEUKEMIA

my-e-lo-li-po-ma \mī-ə-lō-lī-'pō-mə, -lip-'ō-mə\ *n, pl -mas* or *-ma-ta* \-mət-ə\ : a benign tumor esp. of the adrenal glands that consists of fat and hematopoietic tissue

my-e-lo-ma \mī-ə-'lō-mə\ *n, pl -mas* or *-ma-ta* \-mət-ə\ : a primary tumor of the bone marrow formed of any one of the bone-marrow cells (as myelocytes or plasma cells) and usu. involving several different bones at the same time — see **MULTIPLE MYELOMA**

my-e-lo-ma-to-sis \mī-ə-lō-mə-'tō-səs\ *n, pl -to-ses* \-'sēz\ : **MULTIPLE MYELOMA**

my-e-lo-ma-tous \mī-ə-'lō-mət-əs, -lām-ət-əs\ *adj*: of or relating to a myeloma or to myelomatosis

my-e-lo-me-nin-go-cele \mī-ə-lō-mə-'nig-gə-'sēl, -mə-'nig-jə\ *n*: spina bifida in which neural tissue and the investing meninges protrude from the spinal column forming a sac under the skin — compare **MYELOCELE**

my-e-lo-mono-cyte \-'mān-ə-'sīt\ *n*: a myelomonocytic blood cell

my-e-lo-mono-cyt-ic \-'mān-ə-'sit-ik\ *adj*: relating to or being a blood cell that has the characteristics of both monocytes and granulocytes

myelomonocytic leukemia *n*: a kind of monocytic leukemia in which the cells resemble granulocytes

my-e-lo-path-ic \-'path-ik\ *adj*: of or relating to a myelopathy: resulting from abnormality of the spinal cord or of the bone marrow (~ anemia)

my-e-lo-p-a-ty \mī-ə-'lāp-ə-thē\ *n, pl -thies*: any disease or disorder of the spinal cord or bone marrow

my-e-lo-per-ox-i-dase \mī-ə-lō-pə-'rāk-sə-'dās, -dāz\ *n*: green peroxidase of phagocytic cells (as neutrophils and monocytes) that is held to assist in bactericidal activity by catalyzing the oxidation of ionic halogen to free halogen

my-e-lo-phthi-sic anemia \-'tiz-ik, -'ti-sik\ *n*: anemia in which the blood-forming elements of the bone marrow are unable to reproduce normal blood cells and which is commonly caused by specific toxins or by overgrowth of tumor cells

my-e-lo-plax \mī-ə-lə-'plaks, mī-'el-ə\ *n*: any of the large multinucleate cells in bone marrow

my-e-lo-pol-e-sis \mī-ə-lō-(ə)'pōi-'ē-səs\ *n, pl -pol-e-ses* \-'sēz\ : 1: production of marrow or marrow cells 2: pro-

duction of blood cells in b

lood granulocytes

my-e-lo-poi-et-ic \-(ə)'pōi-'ē

ciopoiesis

my-e-lo-pro-lif-er-a-tive \

adj: of, relating to, or l

marked by excessive pro

ments and esp. blood cell

my-e-lo-ra-dic-u-li-tis \-rə-

ma-tion of the spinal cord

my-e-lo-scle-ro-sis \-sklə-'r

g sclerosis of the bone mar

my-e-lo-sis \mī-ə-'lō-səs\ *n*,

liferation of marrow tissue

distribution typical of myel

ENOUS LEUKEMIA

my-e-lo-spon-gi-um \mī-ə-l

8a network in the embryo

ived from the spongioblast

glia

my-e-lo-sup-pres-sion \-sə-'

bone marrow's production

my-e-lo-sup-pres-sive \-sə-'p

pression (~ chemotherapy)

my-e-lot-o-my \mī-ə-'lāt-ə-i

sion of the spinal cord; esp

bers at the midline of the s

fibers for the relief of intrac

my-e-lo-tox-ic \mī-ə-lō-'tāk-

marrow or any of its elemen

ti-ty, \-tāk-'sis-ət-ē\ *n, pl -t*

my-en-ter-ic \mī-ən-'ter-ik\

cular coat of the intestinal v

myenteric plexus *n*: a netwo

between the longitudinal and

intestine — called also **Auerl**

NER'S PLEXUS

myenteric plexus of Auerbac

myenteric reflex *n*: a reflex th

of peristalsis moving along th

contraction of the digestive t

low the place where it is st

mass of food

my-en-ter-on \mī-'en-tə-'rən\

intestine

my-lā-sis \mī-'lā-səs, mē-ə\ *n*,

tion with fly maggots

My-lan-ta \mī-'lan-tə\ *tradema*

antiflatulent preparation of a

sum hydroxide, and simethic

My-le-ran \mī-ə-'ran\ *tradem*

antibulshan

My-l-con \mī-lə-'kən\ *tradem*

antismethicone

my-l-y-oid \mī-lō-'hī-oid\ *c*

ing the mylohyoid muscle

mylohyoid *n*: MYLOHYOID MUSC

my-lo-ty-ol-de-us \-hi-'oid-ē-ə

oid muscle

mylohyoid line *n*: a ridge on ti

the lower jaw extending from ti

the bone in front to the last n

attachment to the mylohyoid

constrictor of the pharynx —

mylohyoid muscle *n*: a flat tria

of the mouth that is located ab

diastolic muscle, extends for

mandible to the hyoid bone, a

posite side forms the floor of tl

hyoid *mylohyoideus*

mylohyoid ridge *n*: MYLOHYOID

mye-blast \mī-ə-'blast\ *n*: an u

of giving rise to muscle cells

mye-blas-to-ma \mī-ə-(ə)'blas-

Merriam-Webster's Medical Desk Dictionary



MERRIAM-WEBSTER, INCORPORATED, *Publishers*
Springfield, Massachusetts, U.S.A.



A GENUINE MERRIAM-WEBSTER

The name *Webster* alone is no guarantee of excellence. It is used by a number of publishers and may serve mainly to mislead an unwary buyer.

Merriam-Webster™ is the name you should look for when you consider the purchase of dictionaries or other fine reference books. It carries the reputation of a company that has been publishing since 1831 and is your assurance of quality and authority.

Copyright © 1996 by Merriam-Webster, Incorporated

Philippines Copyright 1996 by Merriam-Webster, Incorporated

Library of Congress Cataloging in Publication Data

Merriam-Webster's medical desk dictionary

p. cm.

ISBN 0-87779-125-2 (hardcover : alk. paper)

I. Medicine—Dictionaries. I. Merriam-Webster, Inc.

R121.M564 1996

616'.3—dc20

96-15564

CIP

Merriam-Webster's Medical Desk Dictionary principal copyright 1986.

All rights reserved. No part of this book covered by the copyrights hereon may be reproduced or copied in any form or by any means—graphic, electronic, or mechanical, including photocopying, taping, or information storage and retrieval systems—without written permission of the publisher.

Made in the United States of America

15161718RRD9897